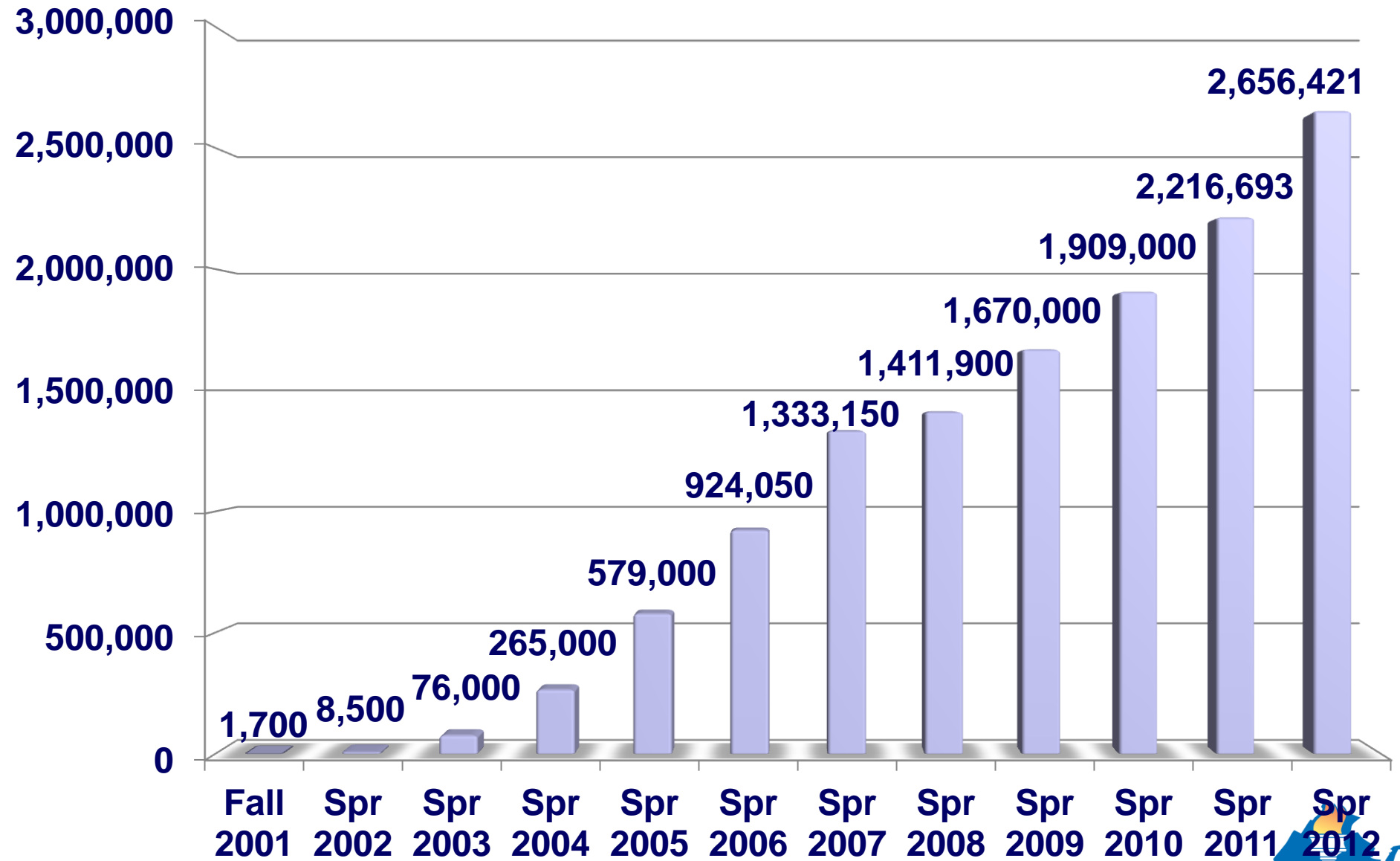


# **Update on the Virginia Assessment Program: Maximizing the Power of Online Testing**

**Shelley Loving-Ryder  
April 24, 2013**

# Online Testing in Virginia



# Opportunities Available with Online Testing

- **Technology-Enhanced Items**
  - increases ability to test higher order thinking skills
  - allows assessment to more closely mirror classroom instruction
  - permits addition of research-based supports to improve access for students with disabilities
- **Students compose the short papers associated with the SOL writing tests on the computer**

# Traditional Grade 5 Writing Test Item Based on 2002 SOL

**4 In sentence 16, family including our dog Rex, should be written —**

- F** family including, our dog Rex
- G** family, including our dog Rex,
- H** family including our dog Rex
- J** as it is



# Technology-Enhanced Grade 5 Writing Item Based on 2010 SOL

The screenshot displays a digital writing interface. At the top, a toolbar includes icons for a mouse, eraser, highlighter, delete, and a red circle icon, along with a 'Help' button. The user's name 'john h doe' and a window title 'Grade 5 Writing Practice Items (2010...)' with an 'Exit' button are in the top right. The main content area is split into two panels. The left panel contains a writing prompt with numbered sentences (25) through (37). Sentence (34) is underlined and contains a missing comma. The right panel provides directions for a punctuation task: 'Click and drag the comma into the correct location within the sentence. There may be one or more correct locations.' Below the directions, it says 'Punctuate sentence 34 correctly.' and shows the sentence 'You and I could visit the Statue of Liberty the Empire State Building, and the Chrysler Building.' with four orange squares indicating possible comma locations. A small icon of a document with a blue line is below the sentence. At the bottom of the interface, there is a 'Flag for Review' button, 'Question 3 of 13 Section 1' text, a 'Section Review' button, and 'Previous' and 'Next' navigation buttons.

**Writing Prompt:**

(25)We continued our trip by visiting some of the other landmarks that make New York City famous. (26)My mom and I went to the top of the Empire State Building, where we were able to see the best view of the city. (27)I never imagined there were so many tall buildings in New York City. (28)Each building seemed to have a different shape or decoration on the outside. (29)My favorite one was the Chrysler Building. (30)The sun reflecting off its silver top was definitely a sight to see. (31)My mom and I had such a wonderful time. (32)We hope to go back very soon. (33)Maybe you could join us. (34)You and I could visit the Statue of Liberty the Empire State Building, and the Chrysler Building. (35)I will be happy to show you pictures from my trip when I see you again. (36)Please write back soon, and tell your family that I said hello.

(37)Your friend always,  
*Marcy*  
Marcy

**Directions:** Click and drag the comma into the correct location within the sentence. There may be one or more correct locations.

**Punctuate sentence 34 correctly.**

You and I could visit the Statue of Liberty the Empire State Building, and the Chrysler Building.


Page 4 of 4

Question 3 of 13  
Section 1

Flag for Review Section Review Previous Next


# **Addition of Item Supports to Improve Accessibility for Students with Disabilities**

# Grade 7 Mathematics SOL Item

userFName M userLName  
Test TitleX Exit

**A powdered drink mix is stored in a cylindrical container that has a radius of 6 centimeters and a height of 14 centimeters. Which is closest to the *maximum* number of cubic centimeters the container will hold?**

**A** 126 cm<sup>3</sup>  
**B** 396 cm<sup>3</sup>  
**C** 504 cm<sup>3</sup>  
**D** 1,583 cm<sup>3</sup>

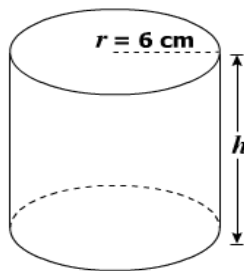
 Flag for ReviewQuestion 11 of 28  
Section 1Section Review◀ PreviousNext ▶

# Grade 7 Mathematics

## VMAST Item

userFName M userLName Test Title X Exit

A drink mix is stored in a cylindrical container that has a radius of 6 centimeters and a height of 14 centimeters.



$r =$   centimeters

$h =$   centimeters

$\pi \approx$

$$V = \pi \cdot r^2 \cdot h$$

**Hint:**

Click and drag the values of the radius, height, and  $\pi$  into the formula.

Which is closest to the volume of this container?

- ☐ A  $264 \text{ cm}^3$
- ☐ B  $528 \text{ cm}^3$
- ☐ C  $1,583 \text{ cm}^3$

Flag for Review Question 12 of 28 Section 1 Section Review Previous Next

# Practice Writing Interface

The screenshot displays the 'Practice Writing Interface' for a 'Grade 8 Writing Practice Tool'. The interface includes a top navigation bar with icons for a mouse, pencil, eraser, highlighter, and a 'Help' button. The user's name 'john h doe' and an 'Exit' button are in the top right. The main area contains a writing prompt: 'After reading the prompt, type a response in the space provided. Click on the exhibit window [icon] to view the Checklist for Writers.' Below the prompt is a toolbar with icons for bold (B), italic (I), underline (U), and a list icon. A red box labeled 'Writing tools' points to this toolbar. Below the toolbar is a large text area with the placeholder text 'This is where the student will type in the response to the prompt.' repeated six times. A red box labeled 'Current line location' points to the first line of this text area. At the bottom left of the text area, it says '7 of 52 lines'. At the bottom right of the text area is a 'Progress bar'. A red box labeled 'Progress bar' points to this bar. The bottom of the interface has a dark blue bar with the word 'Response' and two buttons: 'Previous' and 'Next'.

john h doe  
Grade 8 Writing Practice Tool X Exit

After reading the prompt, type a response in the space provided. Click on the exhibit window [icon] to view the Checklist for Writers.

**Writing tools**

B I U [list icon]

Spell Check Cut Copy Paste Undo Redo

This is where the student will type in the response to the prompt.  
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This is where the student will type in the response to the prompt.

**Current line location**

7 of 52 lines

**Progress bar**

Response Previous Next

# **Continuing to Explore Innovations Available with Online Testing: Next Steps**

- **Study to explore the feasibility of using “artificial intelligence” to score the short paper component of the SOL writing test**
- **Studies looking at the administration of online tests on handheld “tablets”**
- **Study of accessibility features for visually-impaired students**
- **Pilot of computer adaptive testing**

# Overview of Computer Adaptive Testing

# Current Testing System

- All students taking a particular test (grade 7 mathematics) take one of several versions
- Test forms are constructed by testing contractor staff and reviewed by Department staff and by committees of educators
- All students must demonstrate the same level of achievement to be considered proficient or advanced regardless of the version of the test they take



# Computer Adaptive Testing (CAT)

- All students must still demonstrate the same level of achievement to be considered proficient or advanced
- However, instead of each student responding to the same test items contained in a particular version of the test, the computer customizes the items administered to the individual student

# CAT

- In CAT, the computer scores the student's responses to a test item and selects the next item based on the student's response
- CAT is iterative in that the process of choosing questions, scoring responses, and selecting new items is repeated throughout the test

# Advantages of CAT

- **Improved security since students in the same test session are responding to different items.**
- **May provide increased opportunities for retests**
- **Efficient and secure mechanism for online delivery**
  - **Can use flexible administration windows**
  - **Simplifies form construction process**
  - **May allow for shorter testing times**

# Advantages of CAT

- **Increased precision of measurement, especially for high-performing and struggling students**
- **May improve student motivation because content is administered at a more engaging level of difficulty, especially for struggling students**
- **Well-suited for measuring growth**

# CAT Pilot

- **Planned for fall 2013 and spring 2014**
- **Grade 7 mathematics and Grade 8 reading**
- **Results of pilot will inform decision to move forward with the use of CAT for operational testing**

# **Costs Associated with Moving to CAT**

- **Initial cost increase to implement CAT system**
- **Item/test development costs should decrease once CAT is fully implemented**
- **Test administration costs will depend on number of tests taken**